

REMARKS

This amendment is submitted in response to the final Office Action of August 10, 2007. The independent claims are claims 1, 12, 26, and 29-37.

Applicant respectfully notes that the Office Action Summary incorrectly lists several claims as both “rejected” and also as “objected to.” Applicant’s understanding from page 14 of the Office Action is that claims 2, 4, 10, 11, and 27 are allowable.

Independent claims 1, 26, 29-32, and 36-37 are rejected under 35 U.S.C. § 102(b) as anticipated by *Kauhanen* (WO 01/65881), hereinafter WO ‘881. Independent claims 12 and 33-35 are rejected under 35 U.S.C. § 103(a) as obvious from *Kauhanen* in view of *Rasanen* (WO 02/25888), hereinafter WO ‘888.

Claim Amendments

Claim 28 is now amended without prejudice, in order to expedite prosecution of the present application. New claims 38 and 39 are the same as amended claim 28, except that the dependency is different. Claim 31 is also slightly amended to correct errors, including deleting excess words that were obviously included erroneously (also the word “said” is changed to “a” for purposes of clarity).

Applicant respectfully submits that none of these minor amendments introduces any new matter, or raises any new issues.

Summary of Invention

The present invention relates to negotiation and re-negotiation of protocol parameters in the context of handovers in mobile communications systems. Applicant respectfully submits that the invention includes several novel and non-obvious elements, including but not limited to the following.

As a first example, independent claims 1, 29, 31, and 32 relate to the case where a handover of a mobile station from a first MSC (Mobile Services Switching Center, e.g., a UMTS-MSC) to a second MSC (e.g., a GSM-MSC) occurs. A negotiation of protocol parameters occurs (e.g. a re-sequencing timer) to be started by a mobile station. For the reasons detailed below, Applicant respectfully submits that the independent claims 1, 29, 31 and 32 are not anticipated by WO ‘881.

A second example, covered by independent claims 12, 33, 34 and 35 involves the case where a handover of a mobile station from a first BTS that is connected to its MSC via a specific (e.g., IP-based) network to a second BTS that is connected to its MSC via a different (e.g., a TDM-based) network. A negotiation of protocol parameters occurs, wherein the MSC associated with the second BTS transmits a negotiation message with a parameter that is related to a transmission characteristic of the transmission medium between the second BTS and its associated MSC to the mobile station, and wherein the MSC associated with the second BTS can determine a value for this parameter for each BTS it can be associated with. For the reasons detailed below, Applicant respectfully submits that independent claims 12, 33, 34 and 35 are not obvious in view of a combination of WO '881 and WO '888.

A third example of the novelty and non-obviousness of the present invention is covered by independent claims 26, 30, 36 and 37 which involve the case where a handover of a mobile station from a first MSC (e.g., a UMTS-MSC) to a second MSC (e.g., a GSM-MSC) may be possible at a later time. A negotiation of a protocol parameter, for instance a re-sequencing timer, is performed between the mobile station and the first MSC prior to the potential handover. For the reasons detailed below, Applicant respectfully submits that the independent claims 26, 30, 36 and 37 are not anticipated by WO '881.

Reasons Why Rejections of Independent Claims 1, 29, 31, and 32 Should be Withdrawn

With respect to claim 1, the Office Action states at page 6, lines 3-6 that WO '881 would disclose starting said exchange of said at least one negotiation message by transmitting from a protocol entity of said first communication unit (abbreviated as CU in the following), a negotiation message containing a value for said parameter to a protocol entity of said third CU of said second type, and the Office Action refers to page 13, line 11 to page 14, line 11 of WO '881. However, in this passage, it is only disclosed that the GSM MSC (i.e., the third CU of the second type) starts the negotiation by sending a MODIFY-Message, and not that the mobile station (the first CU) would start this negotiation.

WO '881 thus does not disclose the last feature of independent claim 1 (and also of the corresponding claims 29, 31 and 32), of starting the exchange by "***a protocol entity of said first communication unit.***" These claims are thus novel. Moreover, this feature would not be rendered obvious by a combination of prior art documents. The feature that the mobile station

starts the parameter negotiation has the advantage that values for the parameter as selected by the user of the mobile station can serve as a basis for parameter negotiation/re-negotiation, as explained at the end of the first paragraph on page 9 of the patent application.

Reasons Why Rejections of Independent Claims 26, 30, 36, and 37 Should be Withdrawn

The Office Action asserts at page 7, lines 3-6, that WO '881 would disclose that the protocol entities of the first CU and the protocol entities of the third CU of the first type perform the step of exchanging at least one negotiation message containing a value for said parameter prior to said change of association, and refers to page 13, lines 20-23 and page 12, lines 11-23.

However, in these passages it is not disclosed or implied that prior to the handover, there would be an exchange of negotiation messages between the first CU (the mobile station) and the third CU of the first type (the source MSC 16 of WO '881). The cited passages only disclose that a UMTS-to-GSM handover is performed based on default values (see page 12, lines 11-15), i.e., there is no exchange of negotiation messages between the mobile station (first CU) and the source MSC 16 (the third CU of the first type) before the handover takes place. After the handover, the mobile station is allowed to modify the parameters via negotiation (see page 12, lines 15-16).

This procedure is summarized at page 13, lines 20-23 of WO '881, where it is stated that "the connection between the mobile station 6 and the [target] MSC 12 is negotiated based on default values before the actual handover". Therein, the term "negotiated based on default values" is not understood by a skilled person to indicate that an exchange of negotiation messages between the mobile station and the source MSC 16 takes place, but only to indicate that default parameters are assumed instead of exchanging negotiation messages, since such an exchange of negotiation messages is clearly stated to take place after the handover (see page 12, lines 15-16). Interpreting the term "negotiated" in this sentence as describing an exchange of negotiation messages would contradict the entire description starting from page 12, line 11 to page 14, line 11 and the flowchart of Fig. 3, which clearly reflects that first "a default value for a parameter required for the set-up of a connection between the UE and the CS network is determined" (3rd step), and then, after transfer of the connection from the PS

network to the CS network (5th step), optionally a modification/negotiation of the parameter takes place (7th step).

WO '881 thus does not disclose the last feature of independent claim 26 (and corresponding claims 30, 36 and 37), of “*exchanging at least one negotiation message*” between the first CU (the mobile station) and the third CU of the first type, “*prior to said change of associations.*” Nor does this feature appear to be rendered obvious by a combination of the cited prior art documents. The advantage of this present claimed feature is that, in contrast to the approach described in WO '881, a parameter can be altered according to the needs of the mobile station before the actual handover, so that parameter re-negotiation after the handover can be avoided (see the description in the paragraph bridging pages 17 of the patent application). This is not possible in WO '881 due to the use of a default value and the subsequent parameter re-negotiation after the handover.

Reasons Why Rejections of Independent Claims 12, 33, 34, and 35 Should be Withdrawn

With respect to independent claims 12, 33, 34 and 35 the Applicant respectfully submits that these claims are not obvious in view of a combination of WO '881 and WO '888. However, even if these references are combined, the resulting combination does not include all of the features of present claims 12, 33, 34, and 35.

The Office Action correctly states that WO '881 does not disclose the last features of claim 12. Thus, WO '881 does not disclose that in case a change of an association of the first CU (mobile station 6) with a second CU (Node B) of a first type to a second CU (BTS) of a second type occurs, a negotiation message (a MODIFY-message) with a value for a parameter is transmitted from the third CU (target MSC 12) associated with the CU (BTS) of the second type to the first CU (see page 13, lines 25-27). Also, WO '881 does not disclose that said value for said parameter depends on a transmission characteristic of a transmission medium between said new second CU and its associated third CU, and that said value can be determined by said third CU for each of the second CUs it can be associated with.

The Office Action asserts that these features are instead disclosed by WO '888, which discloses an XID proxy unit that monitors and verifies XID commands sent between and MS 1 and an MSC 6 (see Figs. 1, 2 of WO '888). The XID proxy unit has knowledge of the present time maximum values for the link between the MS and the MSC. This may, for

instance, be achieved by feeding the XID proxy a value for $T1_{max}$ that is felt by the network or its operator to be sufficiently large to cope with transmission delays arising from the characteristics of the network or otherwise. Based on that information, the XID proxy has the capacity to intervene in the process of negotiation of $T1_{max}$ values between the MS and the MSC.

However, Applicant respectfully submits that the Office Action does not provide any argument at all with respect to the last feature of claim 12, i.e., that said value can be determined by said third communication unit for each of the second communication units it can be associated with. In WO '888, the XID proxy is disclosed to be initialized with a value $T1_{max}$ that is specific for one particular network between the mobile station and the MSC (see last paragraph on page 10 of WO '888). The rationale of this approach is that the XID proxy can prevent the mobile station and the MSC, which both use default parameter values, from negotiating a value for $T1_{max}$ that is too small with respect to the actual delay encountered in the network.

Therefore, when straightforwardly combining the disclosure of WO '881 and WO '888 without inventive activity, the person skilled in the art would arrive at a solution where an XID proxy would have to be added to the system of WO '881 and would sniff the parameter negotiation between the target MSC and the mobile station. But, when transmitting the negotiation message, the target MSC would then use a standard value (e.g., for parameter $T1_{max}$), since it would rely on the XID proxy to know the parameter value that is specific for the transmission medium between the target MSC and the BTS, and to intervene in the negotiation process accordingly.

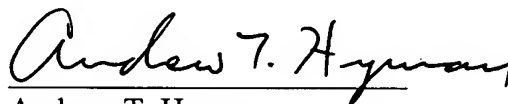
Thus, the last feature of claim 12, that the value for said parameter (that depends on a transmission characteristic of a transmission medium between the new second CU and its associated third CU, and that is contained in the negotiation message sent to the mobile station) can be determined by said third CU (the target MSC) for each of the second CUs (BTS) it can be associated with, is not rendered obvious by a combination of WO '881 and WO '888 even if those two references are combined

Conclusion

In view of the foregoing remarks and amendments, it is respectfully submitted that the present independent claims are in condition for allowance and such action is earnestly solicited. The claims depending therefrom should also be allowed since they include all of the allowable features of the independent claims from which they depend

The Commissioner is hereby authorized to charge to deposit account 23-0442 any fee deficiency required to submit this paper, including but not limited to a fee of \$100 for the two additional independent claims.

Respectfully submitted,



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